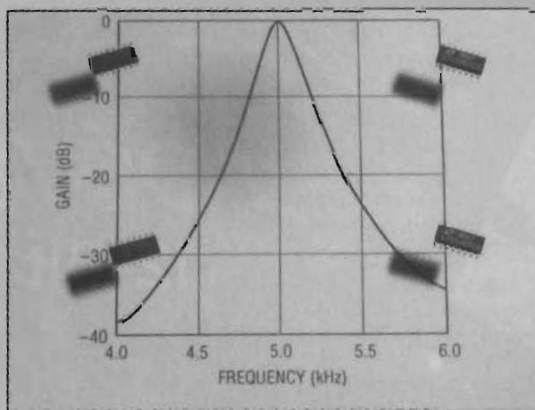


You never outgrow the need for analog filters—even in the digital world

Digital may be the trend, but Nyquist shows that you still need analog filters for antialiasing and reconstruction. Linear Technology's LTC1067 universal-filter building-block IC consists of a pair of identical second-order filter sections. The 16-pin, narrow-SSOP device lets you build bandpass-, lowpass-, highpass-, notch-, and allpass-response filters by adding a few resistors. You set the corner frequency for this switched-capacitor configuration by varying the applied clock, and you can achieve an 80-dB dynamic range from a 3.3V supply, although the filter can operate with supplies as high as $\pm 5V$. Maximum clock frequency is 250 kHz, and clock-to-center-frequency ratio is 100- or 50-to-1, depending on which of two versions you select. LTC offers filter-design software to let you select com-

ponent and clock values to achieve your desired cutoff frequency, ripple, and stopband attenuation for this \$3.50 (1000) IC.

For filtering digital video wave-



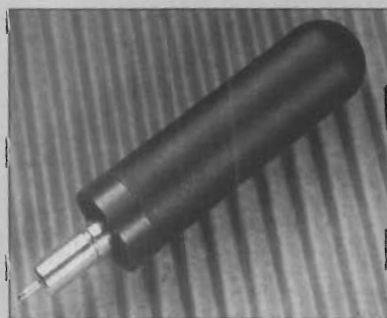
You can achieve a narrow-bandwidth, fourth-order bandpass filter, as well as other filter configurations and specifications, by cascading the two independent filter sections in the Linear Technology LTC1067.

forms after they pass through their reconstruction DACs, the Micro Linear Corp ML6428 active-filter IC eliminates as many as 16 discrete components as well as the aggravation associated with filter design and implementation. The \$1.50 (1000), eight-lead SOIC accepts 1V_{pp} Y and C video inputs (known as S-video), and its outputs include amplified, filtered Y and C signals as well as composite video formed by summing the Y and C signals. The S-video outputs can drive 2V_{pp} into a 150 Ω load, and the composite output can drive a 75 Ω load to the same amplitude span; internal gain for the filter is $\times 2$ for all outputs—by Bill Schweber

Linear Technology Corp, Milpitas, CA, 1-408-432-1900, fax 1-408-434-6441, www.linear-tech.com. Circle No. 395

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ANTENNA COMPLETES THE SIGNAL PATH FOR DUAL-BAND PCS SYSTEMS



The last or first step in the RF channel, the 859/1920-MHz helical stub antenna targets dual-band cellular phones and PCS devices.

With all the fanfare surrounding the latest ICs and active discrete components for cell phones and other Personal Communications Service devices, it's easy to forget that the antenna—a passive device—is a critical element of the signal path. The HAS047 from Toko America is a helical stub antenna that supports frequency bands centered at both 859 and 1920 MHz, suitable for the dual-band wireless phones that are now becoming available. The 33.5-mm (1.31-in.)-long, 9.4-mm (0.37-in.)-diameter antenna has 50 Ω impedance and 2.1 maximum VSWR; bandwidth is ± 35 MHz for the lower band and ± 70 MHz for the upper one. A flexible elastomeric cover protects the \$2 (10,000) unit, which comes with a choice of standard connector options.—by Bill Schweber

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Hot PDA market drives μP and OS interest

Spurred by the success of the 3Com (www.palmpilot.com) Palm Pilot, both μP and operating-system vendors are showing renewed interest in palmtop systems and personal digital assistants (PDAs). Moreover, the contenders aren't limited to behemoths like Microsoft (www.microsoft.com). For example, real-time OS vendor QNX Software Systems has developed the In-Hand software tool kit that's targeted at handheld applications—especially those with real-time requirements.

Available now for the AMD (www.amd.com) Elan SC400 microcontroller, the software suite includes a real-time kernel, a Web browser, an e-mail client, a text editor, a spreadsheet, a contact manager, a personal scheduler, PC Card support, and sever-